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Factsheet

FEEDING AND MANAGING THE GROWING AND FINISHING PIG

(Revision of Factsheet "Feeding and Managing The Growing and Finishing Pig", June 1979)

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SPACE REQUIREMENT

The feeder pig is normally moved to the growing-finishing barn at a weight of 20 to 27 kilograms (45 to 60 pounds). Up to 45 kilograms (100 pounds), 0.37 square metres (4 square feet) of floor space will be required per pig. From 45 kilograms to market weight, 0.74 square metres (8 square feet) will be required. The shape of the pen is important for determining manuring habits. Rectangular pens are preferred over square pens as they encourage pigs to manure at the back and sleep and feed at the front. This results in better sanitation and less feed wastage. A 1.5 by 4.8 metre pen (5 by 16 feet) will accommodate 20 feeder pigs up to a weight of 45 kilograms (100 pounds). Then pigs can be split into more uniform groups of ten, doubling the space per pig. As a rule of thumb, 1 square foot should be provided for every 25 pounds of pig.

Figure 1 Good quality crossbred market hogs.

TEMPERATURE

Room temperature in the growing-finishing barn should be approximately 18 to 21°C (65 to 70°F). During the winter months, spot heat may be required when 20 kilogram (45 pound) feeder pigs are moved into the barn. During the summer, it is impractical to ventilate at the necessary levels for temperatures over 27°C (80°F). Spray cooling is a common method of regulating body temperature during very hot weather. A course spray is directed on the pig periodically, approximately .45 litres (one-tenth of a gallon) per hog per hour. The heat necessary to evaporate the water from the pig's body surface comes from the body of the pig, thus cooling it. Spray cooling will promote better manuring habits and improved market pig performance in very hot weather. Further information on spray cooling can be obtained from OMAF Factsheet, *Spray Cooling of Feeder Pigs,* Agdex 440/717.

Table 1. Change in effective environmental temperature for growing pigs due to various conditions

Condition	Change in Effective Environmental Temperature (°C)
Air Speed (m/sec.)	
0.2	- 4°C
0.5	- 7°C
1.5	-10°C
Floor Type	
straw	+4°C
concrete slats	-5°C
wet solid concrete	-5° to -10°C

Source – L.E. Mount. 1975. Livestock Prod. Sci. 2:381

Table 2. Extra feed required by growing-finishing pigs to compensate for 1°C of coldness*

Class of Pig	Body Weight (kg)	Extra Feed **Per 1°C of Coldness (g/day)
growing	20	13
market	100	35

**Degree of coldness refers to the difference between lower critical temperature and actual effective environmental temperature*

***Assuming ME density of the feed is 2900 kcal/kg*

SOURCE – C.W. Holmes and W.H. Close. 1977. In: Nutrition and the Climatic Environment. Ed. by W. Haresign, H. Swan, and D. Lewis. Butterworths, England

VENTILATION

Air-inlets are the key to a properly-ventilated swine barn. A good inlet will disperse incoming air evenly throughout the

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barn to promote good circulation of air, without causing drafts. Inlets can be manually or automatically controlled, but must be adjusted each time the exhaust rate changes.

Ventilation rates for growing-finishing pigs vary from 3 cfm per pig in winter to 70 cfm per pig in summer. Sufficient exhaust fans should be provided to allow at least four stages of ventilation between the winter minimum and the summer maximum rate. This prevents large temperature fluctuations. The fans should be staged such that as each fan comes on, the volume of air moved is no more than doubled.

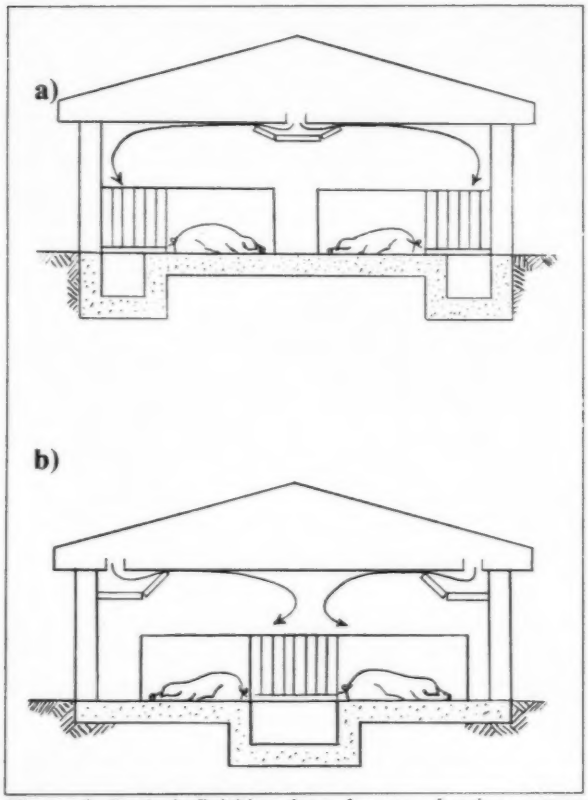

Figure 2 Typical finishing barn layouts showing correct location of air inlets: a) centre alley, centre air inlet, and b) outside alleys, outside air inlets. These layouts will direct drafts to the slatted, dunging area rather than the sleeping area.

Ventilation systems must be equipped with adequate thermostats to maintain a uniform temperature and prevent under- or over-ventilation. They should be located in the normal air flow of the barn, near the pigs, and in an area where they can be easily read, adjusted and cleaned.

Natural ventilation has become popular in Ontario over the last several years, especially for growing-finishing barns. The advantages of natural ventilation include reduced operating costs, less noise thus reducing stress on the animals and the operator, and better control of odour, dust, and humidity. Two building styles have become popular—the cathedral style barn and the modified open front barn. Information on naturally-ventilated barns can be obtained from the Agricultural Engineer in your local country OMAF office.

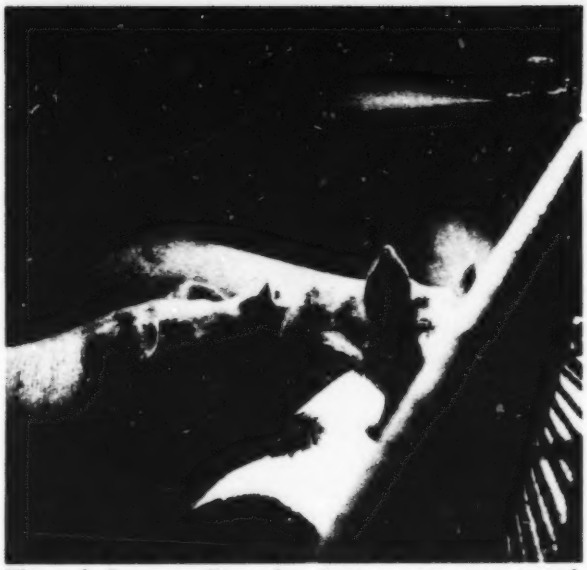

Figure 3 Spray cooling when barn temperatures exceed 27°C (80°F) can improve market hog performance.

DIETS

Normally, the young pig will receive a 20% (dry matter basis, 18% as fed) crude protein pig starter up to a weight of 20 to 23 kilograms (45 to 50 pounds). At this time, the pig can be gradually changed to an 18% (dry matter basis, 16% as fed) grower ration. This ration can be fed up to a weight of 57 kilograms (125 pounds). Following this, a 16% (dry matter basis, 14% as fed) finisher ration can be fed to market weight.

On most farms, it is impractical to maintain two rations in the growing-finishing barn. Therefore, an 18% (dry matter basis, 16% as fed) ration should be fed during the growing-finishing period in order to maximize growth rate and feed efficiency.

Most producers make their rations on the farm, using their own grain, supplemented with soybean meal and a vitamin-mineral premix or a protein supplement. Some producers prefer to buy commercially prepared feeds. Further information on rations can be obtained from OMAF Factsheet, *Common Pig Diets,* Agdex 440/50.

METHOD OF FEEDING

Growing-finishing pigs can either be full-fed (self-feeders) or restricted (floor-feeding). Restricted feeding will reduce backfat deposition, thus improving carcass index. However, restricting feed will also lower the daily rate of gain, which will lengthen days to market. Research trials carried out at Ridgetown College of Agricultural Technology indicate that restricted feeding shows considerable potential for increasing the annual returns in a finishing barn. Restricting feed does slow growth rate and reduce the number of hogs finished in a year, but the resulting hogs are leaner, index higher and increase the dollar return per hog by a considerable amount. Regardless of method of feeding, a high energy ration should be provided to promote maximum growth and feed efficiency. With self-feeders, one feeder space should be provided for every 4 pigs.

Table 3. Target Weight Gains for the Growing Pig

Age	Target Weight (kg) Good	Outstanding	PERIOD (Weeks)	Target Gain (g/day) Good	Outstanding
Birth	1.36	1.5	Birth-3 wks	197	260
3 weeks	5.5	7.0	3–8	414	514
8 weeks	20.0	25.0	8–12	570	964
12 weeks	36.0	52.0	12–17	685	1030
17 weeks	60.0	88.0	17–22	742	
22 weeks	86.0				

Table 4. Weekly Feed Consumption Guide

AGE (Weeks)	Feed Consumption (kg)	Cumulative Feed (kg)
1-4	2	2
5	2	4
6-7	3	10
8	4	14
9	7	21
10-11	8	37
12-13	9	55
14	10	65
15	12	77
16	13	90
17	14	104
18	16	120
19	18	138
20	20	158
21	22	180
22	25	205
23-25	26	283

FEED ANALYSIS AND MILL CALIBRATION

Overfeeding nutrients is an unnecessary expense while underfeeding nutrients can cause poor growth and feed conversion. Feed should be analyzed at least twice per year and mix mills should be calibrated on a regular basis. Feed samples are analyzed at Agri-Food Laboratories in Guelph, but can be dropped off at any OMAF County Office. The following nutrients can be determined by a Type III Analysis—dry matter, crude protein, calcium, phosphorus, magnesium and potassium.

WATER—THE CHEAPEST AND MOST IMPORTANT NUTRIENT

Good clean water is essential for all segments of pork production. Water bowls and troughs tend to be unsanitary and a source of harmful bacteria. Water drinkers are an ideal source of clean fresh water. They should be located so that the animal has to reach up slightly to drink. One drinker should be provided for every 10 pigs. Water nipples should be checked regularly for build-up or contamination that could restrict flow. Growing-finishing pigs require a flow rate of approximately one-quarter to one-half litre per minute. Chlorination will improve flow rates if pipes are blocked.

HEALTH

Respiratory diseases such as Mycoplasma and Haemophilus Pleuropneumonia and Atrophic Rhinitis often affect growing-finishing pigs. Although these diseases are caused by bacteria, environmental stresses (drafts, dust, extreme temperatures) often trigger an outbreak. Both diseases will have an adverse effect on growth rate and feed efficiency.

External parasites (lice and mange) and internal parasites (worms) will also adversely affect growing-finishing pig performance. For additional information, see the following OMAF Factsheets *Lice and Mange Mite Control on Swine,* and *Internal Parasites of Swine,* Agdex 440/675.

Figure 4 A scale is the best method of assessing the weight of live hogs

TAIL BITING

Tail biting may occur when pigs are stressed. Causes of stress are overcrowding, unbalanced rations, temperature fluctuations, poor ventilation, sudden changes in ventilation rate, shortage of water, etc.

If an outbreak of biting occurs, an attempt should be made to determine the cause and correct the problem. Often one or a few pigs will initiate and cause most of the problem. These pigs should be removed from the pen.

Preventative measures include tail-docking within a few days following birth and providing the pigs with something to play with such as an old tire suspended in the pen. For further information on tail biting, see OMAF Factsheet *Tail Biting in Swine,* Agdex 440/14.

GUIDELINES FOR SELECTION OF BREEDING STOCK

Growth rate, feed conversion and backfat thickness are all moderately to highly heritable traits—that is, they can be readily improved through the selection and use of genetically superior breeding stock. Performance-tested boars and gilts should be used.

Most producers purchase boars from a reliable supplier of breeding stock. They should be selected on the basis of backfat thickness, days to 90 kg and structural soundness. Replacement gilts can be purchased or raised on the farm. Selection should be made on backfat thickness and growth rate, as well as reproductive performance and structural soundness.

MARKETING HOGS

On March 31, 1986, the Canadian Hog Grading System was modified to allow electronic assessment of lean yield in the carcass. Carcasses are now graded according to estimated lean yield and carcass weight (Table 4).

Carcasses weighing between 75 and 80 kilograms (165 and 176 pounds) receive the highest index. Average dressing percentage in this weight range is approximately 78%, therefore optimum results would be obtained by shipping pigs at 100 kilograms (225 pounds). Carcasses also index well in the range of 70 to 74 kilograms (154 to 164 pounds) and 80 to 84 kilograms (177 to 185 pounds). Severe penalties occur above and below these weights. A scale is the best method of assessing the weight of live hogs.

Table 5 1986 Canadian Hog Carcass Grading System

Weight Class/ Catégorie de poids		1	2	3	4	5	6	7	8	9	10
		40 – 59.99 kg	60 – 64.99 kg	65 – 69.99 kg	70 – 74.99 kg	75 – 79.99 kg	80 – 84.99 kg	85 – 89.99 kg	90 – 94.99 kg	95 – 99.99 kg	100+
Yield Class/ Cat. de rendement	Estimated Lean Yield/ Rendement approximatif en viande ($)										
1	≤ 53.6	80	100	106	112	114	113	111	108	100	81
2	52.8-53.59	80	98	105	111	113	112	109	107	98	81
3	52.0-52.79	80	97	103	109	112	111	108	105	97	81
4	51.2-51.99	80	95	101	107	110	109	107	103	95	81
5	50.4-51.19	80	93	100	106	108	107	106	102	92	81
6	49.6-50.39	80	92	98	104	107	106	104	100	90	81
7	48.8-49.59	80	90	96	102	105	104	102	97	87	81
8	48.0-48.79	80	89	95	101	103	102	101	95	83	81
9	47.2-47.99	80	88	93	99	102	101	99	92	82	81
10	46.4-47.19	80	87	91	97	100	99	97	90	82	81
11	45.6-46.39	80	86	89	96	98	97	96	88	82	81
12	44.8-45.59	80	85	88	94	97	96	94	85	82	81
13	44.0-44.79	80	83	87	92	95	94	92	82	82	81
14	43.2-43.99	80	82	86	90	91	90	91	82	82	81
15	42.4-43.19	80	82	85	88	89	88	87	82	82	81
16	41.6-42.39	80	82	82	87	88	87	86	82	82	81
17	< 41.6	80	82	82	82	82	82	82	82	82	81

DEMERITS

Type – Subnormal belly, and roughness – less 3 index points

Quality – Abnormal fat, colour or texture – Less 10 index points

Trimmable – The actual weight reduction from the hot carcass weight if the demerit is of farm origin

Ridgling – Index 67

Emaciated – Index 67

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